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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/786,646

04/26/2001

Walter Keller

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08/22/2007

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EXAMINER

JUNTIMA, NITTAYA

ART UNIT

PAPER NUMBER

2616

MAIL DATE

DELIVERY MODE

08/22/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/786,646

Applicant(s)

KELLER, WALTER

Examiner

Nittaya Juntima

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2,3,5-13,15,16 and 21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2,3,5-13,15,16 and 21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to the amendment filed on 5/21/2007.
2. Claims 1, 4, 14, and 17-20 were cancelled.
3. Claims 21, 2-3, 5-10, 11-13, and 15-16 are presently rejected under 103(a).

Claim Objections

4. Claims 8, 9, and 21 are objected to because of the following informalities:
 - in claims 8, 21, line 4, "the form" should be changed to "a form";
lines 5-6, "the form" should be changed to "a form" to avoid lack of antecedent basis;
 - in claim 9, line 4, "the form" should be changed to "a form";
line 5, "drive" should be changed to "driver";
lines 5-6, "the form" should be changed to "a form."

Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 21, 2-3, and 8-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Basu (USPN 6,097,733) in view of Dodge (US 5,854,787).

Regarding claim 21, Basu teaches a method for the optimized transmission of multimedia services in a mobile communications network, particularly a mobile radio communications network (Fig. 6), comprising the steps of:

Providing a mobile terminal having a functional unit (mobile 602 in Fig. 6 having a multimedia interface unit 118A as shown in Fig. 1) on a user's side and a functional unit in the form of an intelligent channel access and management unit (Base station 600 in Fig. 6 having a service interface 106 as shown in Fig. 1) on a core network side for handling a multimedia data stream (a multimedia data stream reads on voice from terminal unit 39 and multimedia data from terminal unit 41, collectively, col. 5, lines 11-25 and 46-col. 6, lines 22, and col. 11, lines 28-39),

Recognizing, in the functional units (a multimedia interface unit 118A, Fig. 1 and a service interface 106, Fig. 1) and depending on the direction of the multimedia data stream (from mobile 602 to Base station 600), particular applications (voice and multimedia applications) within the multimedia data stream by means of suitable parameters in form of protocol variations (because (i) the mobile unit is connected to terminal units 39 and 41 which transmit different type of data separately, col. 11, lines 30-39, and (ii) as shown in Fig. 5, a bandwidth management unit 500 contained in a service interface 106 of the base station and in a multimedia interface 118A of the mobile unit is responsible for transmitting and receiving different type of data including voice protocol and multimedia data in TCP/IP protocol separately, col. 10, lines 29-44, col. 11, lines 22-27, see also col. 7, lines 50-52 and col. 9, lines 10-14, therefore, the multimedia interface unit 118A and the service interface 106 must recognize the voice and multimedia data applications based on the voice and multimedia protocols).

The functional units collaborating with each other to allocate and transmit via various alternative air interface transmission channels of the mobile communications network (“the *bandwidth allocator includes a service interface 106 located in the base station 102 and multimedia interfaces 118A-118C located in the mobile units 104A-104C, respectively. Such service interface 106 and multimedia interfaces 118A-118C operate in cooperation to allocate the available bandwidth* within the communication system 100”, col. 5, lines 11-20, “The communication system may include a plurality of channels, each having a channel bandwidth with *the bandwidth allocator selectively allocating the channels in response to the multimedia communication requirements* to achieve the minimum transmission rate,” Abstract).

The mobile terminal including said user’s side functional unit separating the recognized applications completely or in part by their specific data structure and generating several data streams (voice logical connection and multimedia logical connection are transmitted separately from mobile 602 to base station 600 as shown in Fig. 6), transmitting the several data streams individually and in parallel by their specific data structure via available transmission channels of the mobile communications network which are optimized for respective, needs of the individual data streams (voice and multimedia, e.g. TCP/IP data, are separated and transmitted in different logical connections via available channels as shown in Fig. 6, col. 11, lines 28-39, col. 8, lines 34-66, col. 9, lines 27-31, col. 10, lines 17-28).

Re-assembling the data streams (voice from terminal unit 39 and multimedia data from terminal unit 41 transmitted by mobile 602 to base station 600, Fig. 6), collectively on a receiver side (base station 600 in Fig. 6) (the voice and multimedia data carried by the separate logical connections shown in Fig. 6 must be received by the bandwidth management unit 500, Fig. 5

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contained in a service interface of the base station 600 where the received data would be assembled and decompressed separately, then the multimedia data stream containing TCP/IP packets would be further passed to other circuitry contained in the base station, col. 8, lines 34-62, col. 10, lines 29-33, col. 11, lines 12-39).

However, Basu does not explicitly teach (i) that the mobile terminal's functional unit is in a form of a CAC implemented as a software driver, (ii) the recognized applications are separated by means of software, and (iii) the steps of optionally not aggregating completely some application-specific components (multimedia data, e.g. TCP/IP packets) of the data streams, and further transmitting the non-aggregated components at least in part as a separate data stream via various network accesses to other data network to a receiver.

Regarding (i) and (ii), as shown in Fig. 1, Dodge teaches that a software driver 124 contained in the mobile station 104 is used to control the communication of the data/application messages and recognize message type (recognizing applications) between the mobile station 104 and the base station 102 via the hardware components such as modem circuit and software 126 and radio 128 (col. 2, lines 34-col. 3, lines 42, 61-67).

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the teaching of Basu to incorporate the software driver and means of software into the mobile's functional unit of Basu (the multimedia interface unit 118A, Fig. 1/402, Fig. 4A) which also includes buffer, modem, and radio circuits such that the mobile's functional unit would be in a form of a CAC implemented as a software driver and the recognized applications would be separated by means of software. The motivation/suggestion to do so would have been to utilize the software driver to automatically control the operations of the

existing hardware circuits/components contained within the multimedia interface of mobile terminal of Basu.

Regarding (iii), since Fig. 1 of Basu shows that the base station 102 also connects to an Internet 114 for providing the multimedia communications (col. 5, lines 26-29 and 36-45, and an official notice is taken that it is well known in the art for a base station to forward IP packets received from a mobile terminal to a destination via a packet such as the Internet for a successful packet transmission and cost effective purposes. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to further modify the combined teaching of Basu and Dodge such that (iii) the steps of optionally not aggregating completely some application-specific components (multimedia data, e.g. TCP/IP packets) of the data streams, and further transmitting the non-aggregated components at least in part as a separate data stream via various network accesses to other data network to a receiver would be included. The suggestion/motivation to do so would have been to successfully route the multimedia data to a destination in a cost-effective manner.

Per claim 2, Basu teaches that a data-specific separation (the separation of voice and multimedia data over separate logical connections shown in Fig. 6, col. 6, lines 28-39), which overcomes an air interface for the purpose of optimal use of frequency resources (the radio 454 of the mobile unit operates at varying frequencies in CDMA mode, col. 10, lines 7-27) and to obtain optimal transmission quality of individual applications within a multimedia application (allocation of multiple communication bandwidth segments for a single logical communication path to establish and maintain a grade of service, col. 6, lines 36-42 and col. 8, lines 63-66).

Per claims 3 and 13, it is inherent that reassembling the data streams that were separated according to data structure after optimized parallel transmission (allocation of multiple logical connection bandwidths for a single logical communication path) into the original data streams such that optimization is transparent to the user (the voice and multimedia data carried by the separate logical connections over a single logical communication path from mobile 602 in Fig. 6 and received by the bandwidth management unit 500, Fig. 5 of the base station 600 where the received data would be assembled and decompressed separately must be transparent to the user since the bandwidth allocation is performed automatically at the base station 600 without user involvement, col. 8, lines 34-67, col. 10, lines 29-33, col. 11, lines 12-39).

Claims 8 and 9 contain similar limitations recited in claim 21 with the exception that Basu does not teach that the functional unit (a service interface 106, Fig. 1 or as shown in details, the service interface 300 in Fig. 3) on the side of the core network to provide an additional service to the user by optional conversion of the data streams from the user into other standardized multimedia or protocol forms and to transmit them through alternative pathways as recited in claim 8, and to handle appropriate routing and signaling mechanisms to transmit application or data structure specific parts of multimedia data streams via various transmission networks as recited in claim 9.

However, as shown in Fig. 1 of Basu that the base station 102 is also connected to alternative pathways, e.g., PSTN 116 and Internet 114 (col. 2, lines 60-65). An official notice is taken that it is well known in the art that the connection between the base station and the PSTN and/or Internet may be supported by standardized multimedia or protocol forms, e.g., dual tone,

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ATM, IP, SONET, Ethernet, etc., and in order for the base station to successfully forward the data such as voice and data packets (TCP/IP) received from the mobile user to the PSTN and/or Internet for its final destination, it is also well known in the art that the base station would have to convert the data into the standardized multimedia or protocol forms supported by the PSTN and/or Internet and to handle appropriate routing and signaling mechanisms to transmit application such as voice via various transmission networks such as mobile communications network and PSTN.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the combined teaching of Basu and Dodge such that the functional unit (a service interface 106, Fig. 1 or as shown in details, the service interface 300 in Fig. 3) would provide an additional service to the user by optional conversion of the data streams from the user into other standardized multimedia or protocol forms and to transmit them through alternative pathways and would handle appropriate routing and signaling mechanisms to transmit application or data structure specific parts of multimedia data streams via various transmission networks. The motivation/suggestion to do would have been to further forward the data to its final destination using the appropriate protocols, routing and signaling mechanisms supported by the alternative pathways/various transmission networks.

Regarding claim 10, the combined teaching of Basu and Dodge does not teach that the claimed method may be used in fixed network systems in like manner as needed. However, it would have been obvious to one skilled in the art at the time the invention was made to apply the

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claimed method in fixed network systems as such application involves only routine skills in the art as long as it does not yield any unexpected results.

Regarding claim 11, Basu further teaches enabling a network provider to allocate channels for dynamic load distribution and load optimization of alternative transmission channels (a network provider that operates the base station 600 must allocate bandwidths of other logical connections connected to mobiles 604 and 606 as shown in Fig. 6, col. 11, lines 37-39, 46-57 and col. 8, lines 63-66).

Regarding claim 12, Basu also teaches enabling the user to use the method for a customer-specific selection and choice method in areas including speed of transmission, services used, priorities, quality of service and costs (subscribed levels which inherently must include data rate, services used, priorities, QoS, and costs, col. 3, lines 37-55).

7. Claims 5 and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Basu (USPN 6,097,733) in view of Dodge (US 5,854,787), and further in view an art of record (WO 95/18491).

Regarding claims 5 and 15-16, the combined teaching of Basu and Dodge fails to teach that the functional unit on the user's side (mobile 602, Fig. 6) as well as the functional unit on the side of the core network (Base station 600 in Fig. 6) are designed such that a permanent method for updating to new methods and protocols as recited in the claims is possible.

However, the art of record teaches that a data communication device is designed in its software modules for microprocessors (firmware) such that an update of partial functions is provided wirelessly which allows for a permanent method for updating new methods and protocols (firmware, which must include protocol, conversion, and algorithm-specific components, is updated wirelessly, Abstract, Fig. 1, page 10, lines 31-page 11, lines 1-10).

Given the teaching of the art of record, it would have been obvious to one skilled in the art at the time the invention was made to modify the functional unit on the user's side as well as the functional unit on the side of the core network to be designed in their protocol, conversion, and algorithm-specific components preferably as software modules for microprocessors in such a way that an update of partial functions as needed via the mobile radio communications network is possible, which thus allows for a permanent method for updating to new methods and protocols as recited in the claim. The motivation/suggestion to do so would have been to enable software updates to be provided to the user wirelessly as taught by the art of record (page 11, ll 6-10).

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Basu et al. ("Basu") (USPN 6,097,733) in view of Dodge (US 5,854,787), and further in view of an art of record (WO 97/26739).

Regarding claim 6, the combined teaching of Basu and Dodge fails to teach providing an optional connection between the network functional unit and a CCBS of a network operator as recited in the claim.

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However, as shown Fig. 1, the art of record teaches a connection between a base station (BSC) and a CCBS (a billing gateway support node BGGSN) of a network operator (operator 1) for the billing of offered services and a creation and verification of use by a single user (BGGSN receives user-specific charging information and forwards charging information to a charging system which must inherently include creation and verification of use by a single user, Abstract and page 8, lines 6-page 9, lines 1-3).

Since the network functional unit (a service interface 106 in Fig. 1) of Basu is contained in a base station 102 and given the teaching of the art of record with a connection between the base station and Customer Care and Billing System, it would have been obvious to one skilled in the art when the invention was made to include having an optional connection between the network functional unit (a service interface 106 in Fig. 1) and a CCBS of a network operator for the billing of offered services and a creation and verification of the use covered by the method by a single user. The motivation/suggestion to do so would have been to provide charging information as taught by the art of record (Abstract).

9. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Basu (USPN 6,097,733) in view of Dodge (US 5,854,787), and further in view of Sakoda (USPN 6,088,345).

Regarding claim 7, the combined teaching of Basu and Dodge does not explicitly teach that the functional unit on the user's side (mobile 602 in Fig. 6) as well as the functional unit on the side of the core network (a base station 600 in Fig. 6) communicate with each other by means of inband signaling (a signal requesting to set another transmission channel is transmitted using a

part of the predetermined transmission channel), such that the needs of an optimized data transfer via various transmission channels between the functional units are met.

However, Sakoda that a functional unit on the user's side (a terminal apparatus, Fig. 10) and a functional unit on the side of a core network (a base station shown in Fig. 2) communicate with each other by means of inband signaling (a signal requesting to set another transmission channel is transmitted using a part of the predetermined transmission channel), such that the needs of an optimized data transfer via various transmission channels between the functional units are met (col. 12, lines 34-45).

Therefore, it would have been obvious to one skilled in the art when the invention was made to modify the combined teaching of Basu and Dodge to include the teaching of Sakoda such that the functional unit on the user's side as well as the functional unit on the side of the core network communicate with each other by means of inband signaling, such that the needs of an optimized data transfer via various transmission channels between the functional units are met as recited in the claim. The suggestion/motivation to do so would have been to set another transmission during a communication that is in progress to transmit data of a type different from the data currently communicated by using other transmission channel thus set as taught by Sakoda (col. 12, lines 41-45).

Response to Arguments

10. Applicant's arguments with respect to claims 8, 9, and 21 have been considered but are moot in view of the new ground(s) of rejection. Dodge shows in Fig. 1 that the software driver

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is used to control hardware components of a mobile terminal. Therefore, all the claimed limitations are met by the combined teaching of Basu and Dodge.

In addition, regarding the conversion of the data into standardized multimedia or protocol forms as recited in independent claim 8 in which the official notice was taken, it is noted that Applicant did not challenge the Official notice assertion in the Final rejection dated 9/1/2006. And Fig. 1 of Basu clearly shows that the base station 102 is also connected to PSTN 116 and Internet 114 for providing the multimedia communications (col. 5, lines 36-42). Therefore, in order for the multimedia data, such as TCP/IP packet (Basu, col. 8, lines 47-62), from mobile terminal 104 to be routed to its final destination, it must be converted into a standardized form, such as Ethernet packet, in order for it to be physically routed over a connection connected between the base station 102 and the Internet 114. As such, the rejection of claim 8 based on Official notice is proper.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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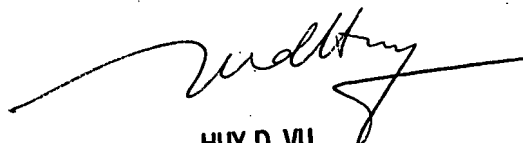
CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nittaya Juntima whose telephone number is 571-272-3120. The examiner can normally be reached on Monday through Friday, 8:00 A.M - 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on 571-272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nittaya Juntima
Examiner, AU 2616
August 17, 2007



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